MERBoard

NASA Ames Research Center Computational Sciences Division

A tool developed specifically to assist science and operations teams during the Mars Exploration Rover (MER) Mission surface operation planning is MERBoard, a product of Ames Research Center's MER Human Centered Computing project and a new class of computing platform -- the collaborative computer.

A combination of software and five-foot touchscreen, MERBoard's large interactive work surface facilitates group collaboration. The MERBoard software is designed to run on large plasma displays with touch screen overlays, thus providing an immersive and interactive environment for teams to view, annotate and share data.

The standard deployment configuration provides an integrated whiteboard, web browser, remote viewing and control for collaboration over distance, and personal and group storage spaces. Customization for specific domains is provided through plug-ins. For the MER mission, plug-ins included a flow charting tool for strategic rover operations and mission planning, 3D visualization of the Martian terrain, a data navigator to navigate the mission database, and situational awareness tools.

With the MERBoard the user can drag and drop data to a personal or group icon to store or email it. Data on the screen can be captured and annotated on the MERBoard's whiteboard and content can be created on the whiteboard. All applications can be viewed and controlled from another location, enabling collaboration from multiple boards.

The MERBoard is being extended to what's called the Xboard architecture, a development platform for NASA. Its plug-in architecture allows NASA developers to add capabilities to fit any NASA environment. The technology is Java based and runs on all industry standard operating systems, including Windows, Linux and Mac OS-X.

MERBoard Extendibility

In essence, MERBoard is a platform that can be used to develop a variety of custom solutions. In specific, custom applications can be created in the following manner:

*General Web applications can be created or customized to take advantage of running in the embedded browser on the MERBoard's large screen display.

* Java applications can be added to the toolbar architecture, which can directly extend and interface with the existing core MERBoard functionality. For example, remote viewing and control, ubiquitous file storage, screen capture and distribution by email.

* Users can also link existing non-Java applications via a standard socket interface that allows creation of a loosely coupled interface through API calls that control a screen position. For example a C++ data visualization tool called Viz was able to run as a MERBoard plugin for MER.

Contact Jay Trimble Jay.P.Trimble@nasa.gov
http://ic.arc.nasa.gov